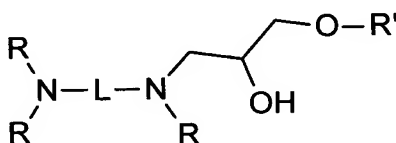


CLAIMS

We claim:

1. In a method for controlling the foaming of a waterborne composition which is a protective or decorative coating; an ink composition; an adhesive composition; an overprint varnish; a radiation cured coating, ink, or adhesive composition; an agricultural composition; or an acid gas scrubbing composition by the incorporation of a foam controlling agent in an amount effective for controlling foam, the improvement which comprises utilizing as the foam controlling agent an alkyl glycidyl ether-capped diamine compound of the formula:



where L is a linker group comprising a linear, branched, or cyclic alkyl group having from 2 to about 6 carbon atoms or an alkyl ether group having from about 4 to about 8 carbon atoms; R is independently selected from hydrogen or -CH₂CHOHCH₂OR'; and R' is an alkyl group having from about 4 to about 22 carbon atoms; the compound generating an initial foam height at least 30% less than a 0.1 wt% aqueous solution of dioctyl sodium sulfosuccinate (DOSS), when added at 0.1 wt% to the aqueous DOSS solution.

2. The method of Claim 1 in which L is an alkyl group having from 2 to about 5 carbon atoms.

3. The method of Claim 1 in which L is an alkyl ether group having from about 4 to about 7 carbon atoms.

4. The method of Claim 1 in which R is hydrogen.

5. The method of Claim 1 in which R is $-\text{CH}_2\text{CHOHCH}_2\text{OR}'$.

6. The method of Claim 1 in which R' is an alkyl group having from about 4 to about

20 carbon atoms.

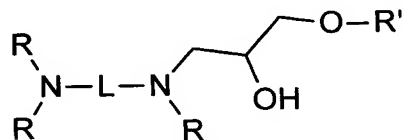
7. The method of Claim 5 in which R' is an alkyl group having from about 4 to about

20 carbon atoms.

8. The method of Claim 1 in which L is $-\text{CH}_2\text{CH}_2-$, R is independently selected from hydrogen or $-\text{CH}_2\text{CHOHCHO}-\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$, and R' is a butyl group.

9. The method of Claim 1 in which L is $-\text{CH}_2\text{CH}_2-$, R is independently selected from hydrogen or $-\text{CH}_2\text{CHOHCHO}-\text{CH}_2\text{CH}(\text{CH}_3)_2$, and R' is an isobutyl group.

10. In a method for controlling the foaming in an industrial process which is an oil well production, acid gas scrubbing, food processing, pulp or paper processing, fermentation, metal treatment, polymer or chemical synthesis, waste-water treatment, or textile dyeing or finishing process employing a waterborne composition by the incorporation of a foam controlling agent in an amount effective for controlling foam, the improvement which comprises employing as the foam controlling agent an alkyl glycidyl ether-capped diamine compound of the formula:



where L is a linker group comprising a linear, branched, or cyclic alkyl group having from 2 to about 6 carbon atoms or an alkyl ether group having from about 4 to about 8 carbon atoms; R is independently selected from hydrogen or $-\text{CH}_2\text{CHOHCH}_2\text{OR}'$; and R' is an alkyl group having from about 4 to about 22 carbon atoms; the compound generating an initial foam height at least 30% less than a 0.1 wt% aqueous solution of dioctyl sodium sulfosuccinate (DOSS), when added at 0.1 wt% to the aqueous DOSS solution.

11. The method of Claim 10 which is a process for the removal of hydrogen sulfide and/or carbon dioxide from acid gas-containing gas stream wherein the gas stream is contacted with an aqueous amine solution to adsorb the hydrogen sulfide, the aqueous amine solution is optionally regenerated, and the alkyl glycidyl ether-capped diamine is added to control foam.

12. The method of Claim 10 in which L is an alkyl group having from 2 to about 5 carbon atoms.

13. The method of Claim 10 in which L is an alkyl ether group having from about 4 to about 7 carbon atoms.

14. The method of Claim 10 in which R is hydrogen.

15. The method of Claim 10 in which R is $-\text{CH}_2\text{CHOHCH}_2\text{OR}'$.

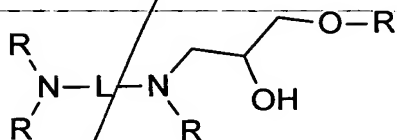
16. The method of Claim 10 in which R' is an alkyl group having from about 4 to about 20 carbon atoms.

17. The method of Claim 15 in which R' is an alkyl group having from about 4 to about 20 carbon atoms.

18. The method of Claim 10 in which L is -CH₂CH₂-, R is independently selected from hydrogen or -CH₂CHOHCHO-CH₂CH₂CH₂CH₃, and R' is a butyl group.

19. The method of Claim 10 in which L is -CH₂CH₂-, R is independently selected from hydrogen or -CH₂CHOHCHO-CH₂CH(CH₃)₂, and R' is an isobutyl group.

20. An aqueous composition comprising a foam controlling agent, which composition is a protective or decorative coating; an ink composition; an adhesive composition; an overprint varnish; a radiation cured coating, ink, overprint varnish, or adhesive composition; an agricultural composition, or an acid gas scrubbing composition and manifests greater foaming in the absence of the foam controlling agent, wherein the foam controlling agent is an alkyl glycidyl ether-capped diamine foam control agent present in an amount effective for controlling foam and has the formula:



where L is a linker group comprising a linear, branched, or cyclic alkyl group having from 2 to about 6 carbon atoms or an alkyl ether group having from about 4 to about 8 carbon atoms; R is independently selected from hydrogen or -CH₂CHOHCH₂OR'; and R' is an alkyl group having from about 4 to about 22 carbon atoms; the compound generating an initial foam height at least 30% less than a 0.1 wt% aqueous solution of dioctyl sodium sulfosuccinate (DOSS), when added at 0.1 wt% to the aqueous DOSS solution.

21. The composition of Claim 20 in which L is an alkyl group having from 2 to about 5 carbon atoms.

22. The composition of Claim 20 in which L is an alkyl ether group having from about 4 to about 7 carbon atoms.

23. The composition of Claim 20 in which R is hydrogen.

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24. The composition of Claim 20 in which R is $-\text{CH}_2\text{CHOHCH}_2\text{OR}'$.

25. The composition of Claim 20 in which R' is an alkyl group having from about 4 to about 20 carbon atoms.

26. The composition of Claim 24 in which R' is an alkyl group having from about 4 to about 20 carbon atoms.

27. The composition of Claim 20 in which L is $-\text{CH}_2\text{CH}_2-$, R is independently selected from hydrogen or $-\text{CH}_2\text{CHOHCHO}-\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$, and R' is a butyl group.

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20 28. The composition of Claim 20 in which L is $-\text{CH}_2\text{CH}_2-$, R is independently selected from hydrogen or $-\text{CH}_2\text{CHOHCHO}-\text{CH}_2\text{CH}(\text{CH}_3)_2$, and R' is an isobutyl group.

29. The composition of Claim 20 which is an aqueous coating composition comprising in an aqueous medium 30 to 80 wt% of a coating composition which comprises the following components:

(a) 0 to 50 wt% of a pigment dispersant/grind resin;

(b) 0 to 80 wt% of coloring pigments/extender pigments/anti-corrosive pigments/other pigment types;

(c) 5 to 99.9 wt% of water-borne/water-dispersible/water-soluble resins;

(d) 0 to 30 wt% of slip additives/antimicrobials/processing aids;

(e) 0 to 20 wt% of coalescing or other solvents;

(f) 0.01 to 10 wt% of surfactant/wetting agent/flow and leveling agents; and

(g) 0.01 to 5 wt% of an alkyl glycidyl ether-capped diamine foam control agent.

30. The composition of Claim 20 which is an aqueous ink composition comprising in an aqueous medium 20 to 60 wt% of an ink composition which comprises the following components:

(a) 1 to 50 wt% of a pigment;

(b) 0 to 50 wt% of a pigment dispersant/grind resin;

(c) 0 to 50 wt% of a clay base in appropriate resin solution vehicle;

(d) 5 to 99.9 wt% of water-borne/water-dispersible/water-soluble resins;

(e) 0 to 30 wt% of coalescing solvents;

(f) 0.01 to 10 wt% of a surfactant/wetting agent;

(g) 0.01 to 10 wt% of processing aids/solubilizing agents;

(h) 0.01 to 5 wt% of an alkyl glycidyl ether-capped diamine foam control agent.

31. The composition of Claim 20 which is an aqueous agricultural composition comprising in an aqueous medium 0.188 to 80 wt% of an agricultural composition which comprises the following components:

(a) 0.1-50 wt% of a pesticide or plant growth modifying agent;

(b) 0 to 5 wt% of a dye;

(c) 0 to 20 wt% of a thickener/stabilizer/co-surfactant/gel/Inhibitor;

- (d) 0 to 25 wt% of an antifreeze;
- (e) 0.01 to 50 wt% of a surfactant/wetting agent;
- (f) 0.01 to 10 wt% of an alkyl glycidyl ether-capped diamine foam control agent.

5 32. The composition of Claim 20 which is a fountain solution composition comprising the following components:

- (a) 0.05 to 10 wt% of a film formable, water soluble macromolecule;
- (b) 1 to 25 wt% of an alcohol, glycol, or polyol with 2-12 carbon atoms;
- (c) 0.01 to 20 wt% of a water soluble organic acid, inorganic acid, or a salt thereof;
- (d) 30 to 70 wt% of water;
- (e) 0.01 to 5 wt% of a wetting agent; and
- (f) 0.01 to 5 wt% of an alkyl glycidyl ether-capped diamine foam control agent.

15 33. The composition of Claim 20 which is a pressure sensitive adhesive composition comprising the following components:

- (a) 50 to 99 wt% of an acrylic copolymer emulsion or SBR/natural rubber latex;
- ~~(b) 0 to 50 wt% of a tackifier dispersion;~~
- (c) 0 to 5 wt% of a rheology modifier;
- (d) 0 to 10 wt% of water;
- 20 (e) 0.1 to 5 wt% of a wetting agent;
- (f) 0.1 to 5 wt% of an alkyl glycidyl ether-capped diamine foam control agent.

25 34. The composition of Claim 20 which is an overprint varnish composition comprising the following components

- (a) 20 to 80 wt% of a water-borne/water dispersible resin;
- (b) 0 to 20 wt% of a wax;



(c) 2 to 50 wt% of water;

(d) 0 to 20 wt% of a biocide/optical brightener/crosslinker/scuff and water resistant additive;

(e) 0 to 20 wt% of a co-solvent;

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(f) 0.01 to 5 wt% of a wetting agent;

(g) 0.1 to 5 wt% of an alkyl glycidyl ether-capped diamine foam control agent.

35. The composition of Claim 20 which is an aqueous acid gas scrubbing composition comprising in water 10 to 70 wt% of at least one amine and 1 to 500ppm of an alkyl glycidyl ether-capped diamine foam control agent.

36. A compound which is ethylenediamine capped with 3 or 4 iso-butyl glycidyl ethers.

37. A compound which is di(aminopropyl)diethylene glycol capped with 1 to 4 n-butyl glycidyl ethers.

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